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Amendments to the Claims:

This listing of claims reflects all claim amendments and replaces all prior versions, and listings, of claims in the application. Material to be inserted is in **bold and underline**, and material to be deleted is in ~~strikeout~~ and/or in ~~[[double brackets]]~~ if the deletion would be difficult to see.

LISTING OF CLAIMS:

1. (Currently amended) An electronic circuit, comprising:

a first electromechanical actuator coil coupled to a **first intake or exhaust** cylinder valve of **a first cylinder of an internal combustion engine, the first electromechanical actuator coil to control actuation of the first intake or exhaust valve between an open position and a closed position,**

a second electromechanical actuator coil **coupled to at least one of the first intake or exhaust and a second intake or exhaust valve to control actuation of the at least one of the first intake or exhaust valve or the second intake or exhaust valve between an open position and a closed position,** where a first end of said second electromechanical actuator coil is coupled to a common reference with a first end of said first electromechanical actuator coil;

a first energy storage device, where a first end of said first energy storage device is coupled to said common reference; and

a second energy storage device, where a first end of said second energy storage device is coupled to said common reference, and wherein a charge balance is maintained on said first and second energy storage devices.

2. (Original) The electronic circuit of claim 1 wherein said first energy storage device is a first capacitor.
3. (Original) The electronic circuit of claim 1 wherein said second energy storage device is a second capacitor.
4. (Original) The electronic circuit of claim 1 further comprising:
a voltage source, with a first end of said source coupled to a second end of said first energy storage device.
5. (Original) The electronic circuit of claim 4 wherein a second end of said source is coupled to a second end of said second energy storage device.
6. (Original) The electronic circuit of claim 1 further comprising:
a first one way current device, with a first end of said one way current device coupled to a second end of said first electromechanical actuator coil.
7. (Original) The electronic circuit of claim 6 further comprising:
a second one way current device, with a first end of said one way current device coupled to a second end of said second electromechanical actuator coil.
8. (Original) The electronic circuit of claim 1 further comprising:
a first switch for actuating said first electromechanical actuator coil; and

a second switch for actuating said second electromechanical actuator coil.

9. (Currently amended) A system, comprising:

a dual-coil half bridge converter adapted to be coupled to a single or multiple coil actuator of an intake or exhaust valve of a cylinder valve, the cylinder valve in an internal combustion engine, the actuator being energized to control actuation of the intake or exhaust valve between an open position and a closed position, the converter having a first capacitor and a second capacitor and a voltage source, with at least one end of each of the first and second capacitors coupled to a common reference, the converter actuated via switches to individually energize coils in said dual coil actuator, wherein at least one end of said actuator is coupled to said common reference, and wherein said dual-coil half bridge converter maintains a charge balance on said first and second capacitors.

10. (Cancelled)

11. (Original) The system of claim 9 wherein said converter is adapted to be coupled to a plurality of engine cylinder valves.

12. (Original) The system of claim 11 wherein said dual coil half bridge converter maintains a charge balance on said first and second capacitor even when at least one cylinder of the engine is deactivated while at least one other

cylinder carries out combustion.

13. (Original) The system of claim 9 wherein said capacitors form a dual voltage source.

14. (Previously presented) The system of claim 9 wherein said dual coil half bridge converter is adapted to be coupled to at least two dual coil actuators of two cylinder valves, wherein the converter is configured to balance voltage of said first and second capacitor.

15. (Currently amended) A dual coil half bridge power converter system, comprising:

a power source;

an intake or exhaust valve of a cylinder, in an internal combustion engine, the valve having an armature and at least one spring;

a single or multiple coil actuator coupled to ~~[[of a]]~~ the intake or exhaust valve~~cylinder valve, the cylinder valve in an internal combustion engine, the~~
actuator configured to control lift of the intake or exhaust valve between an
open position and a closed position by selectively driving the armature
against the force of the at least one spring;

only one actuating switch for actuating each coil in said actuator; and

an energy storage device for storing energy during deactivation of at least one coil.

16. (Original) The system of claim 15 further comprising a unidirectional current device for allowing freewheeling current during deactivation of at least one coil.

17. (Original) The system of claim 16 wherein said storage device includes two capacitors in a split voltage power supply topology.

18. (Original) The system of claim 16 wherein said energy storage device includes two capacitors in a boosted power supply topology.

19. (Previously presented) The system of claim 15 further comprising a plurality of dual coil actuators of cylinder valves of an engine, and only one actuating switch coupled to each coil of said plurality of coils.

20. (Currently amended) A system comprising:

a power supply with a positive and negative terminal;

a first coil coupled to a cylinder valve actuator of an engine, said first coil having a first end and a second end;

a first switch coupled between a first end of said first coil and said positive terminal of said power supply;

a first capacitor coupled between said positive terminal of said power supply and said second end of said first coil;

a first diode coupled between said first end of said first coil and said

negative terminal;

a second coil, said second coil having a first end and a second end, said first end of said second coil coupled to said second end of said first coil;

a second capacitor coupled between said first end of said second coil and said negative terminal;

a second switch coupled between said second end of said second coil and said negative terminal; [[and]]

a second diode coupled between said second end of said second coil and said positive terminal

a third coil; and

a fourth coil, wherein said system is configured to balance voltage across said first, second, third, and fourth coils.

21. (Original) The system of claim 20 where said negative terminal of said power supply is coupled to a ground.

22. (Original) The system of claim 20 where said switches control actuation of at least one cylinder valve of an internal combustion engine.

23. (Original) The system of claim 20 wherein said second coil is coupled to said cylinder valve actuator.

24. (Previously presented) The system of claim 20 wherein said second coil is

coupled to another cylinder valve actuator of said engine.

25. (Cancelled)

26. (Original) The system of claim 20 where said second end of said first coil is coupled to ground.

27. (New) The system of claim 1 wherein the first electromechanical actuator coil and the second electromechanical actuator coil control actuation of different intake or exhaust valves of different cylinders and the charge balance is maintained on said first and second energy storage devices based on a coordinated firing order of the different cylinders.

28. (New) The system of claim 1 wherein the first electromechanical actuator coil and the second electromechanical actuator coil cooperatively control actuation of the first intake or exhaust valve between a substantially fully open position and a substantially fully closed position.

29. (New) The system of claim 1 wherein the first electromechanical actuator coil controls actuation of the first intake or exhaust valve and the second electromechanical actuator coil controls actuation of the second intake or exhaust valve.

30. (New) The system of claim 29 wherein the first intake or exhaust valve is in operative communication with the first cylinder and the second intake or exhaust valve is in operative communication with the first cylinder.

31. (New) The system of claim 29 wherein the first intake or exhaust valve is in operative communication with the first cylinder and the second intake or exhaust valve is in operative communication with a second cylinder.

32 (New) The system of claim 11 wherein the charge balance is maintained by disabling at least some of the plurality of cylinders in natural charge sharing pairs.